Petrifactions of the Earliest European Angiosperms.

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(Abstract.)

The paper records the existence of Angiosperms in England in Aptian times, *i.e.* at a geological period when they have been hitherto supposed not to exist in Northern Europe; describes botanically the anatomy of these fossils, which come under three new genera; and notes the points of structural and phylogenetic interest in them, as being the oldest Angiosperms of which the anatomy is preserved, and contemporaneous with Bennettites.

The specimens are from the Lower Greensand; all are in the Geological Department of the British Museum. All are woody Angiosperm with secondary thickening, of which the internal anatomy is preserved. In one of the specimens the petrifaction of the tissues is remarkably beautiful, showing the pit canals in the wood fibres, ray cells, etc.

The three specimens differ so much that they are put into three different genera to which entirely non-committal names are given, as there is no evidence that they belong to any extant family. The plants described are shortly:—

Aptiana radiata, gen. et spec. nov., a woody stem about 3·5 cm. in diameter, with pith and cortex preserved. The vessels are exceedingly small, comparatively evenly scattered, little disturbing the rows of fibre-tracheids composing the uniform wood. The rays are numerous, uniseriate, and three- to four-seriate, the latter with funnel-shaped expansions in the phloem.

Woburnia porosa, gen. et spec. nov., part of the secondary wood, with large numbers of exceedingly large vessels, and broad rays.

Sabulia Scottii, gen. et spec. nov., decorticated woody stem with pith, in which all the tissues are much thickened, and the vessels principally in pairs.

All are undoubted Angiosperms, which cannot be referred to any living form, though in individual details of structure they resemble one or other of the families of modern Angiosperms. That they are contemporaneous with Bennettites gives them a further point of theoretic interest. Their chief importance lies in the fact that they are the first Angiosperms to be described from this early horizon in Northern Europe, and that they are the oldest Angiosperms of which we know any part of the anatomy.